Relationship between dyslipidaemia and glycaemic status in patients with type 2 diabetes mellitus

ABSTRACT

The risk of coronary heart disease (CHD) is dramatically increased in diabetic patients due to their atherogenic lipid profile. The severity of CHD in diabetic patients has been found to be directly associated with glycated haemoglobin (HbA1c). According to the Malaysian Clinical Practice Guidelines on diabetes mellitus (DM), HbA1c level less than 6.5% reduces the risk of microvascular and macro vascular complications. Hence, this study aimed to determine the relationship between dyslipidaemia and glycaemic status in patients with type 2 DM (T2DM) patients in Hospital Putrajaya, a tertiary endocrine centre in Malaysia. This was a cross sectional, retrospective study of 214 T2DM patients with dyslipidaemia who had visited the endocrine clinic between January 2009 and December 2012. Significant correlations were found between fasting blood glucose (FBG) and HbA1c with total cholesterol (TC), triglyceride (TG), low density lipoprotein cholesterol (LDL), non-high density lipoprotein cholesterol (non-HDL), LDL/HDL ratio and TC/HDL ratio; greater correlation being with HbA1c than FBG. In patients with HbA1c ≥6.5%, TC, TG, non-HDL and TC/HDL ratio were significantly higher than in patients with HbA1c < 6.5%. Non-HDL, LDL/HDL ratio, TC/HDL ratio and HbA1c were significantly lower in patients on statin treatment than non-treated patients ($p<0.05$). This significant association between glycaemic status and dyslipidaemia emphasises the additional possible use of HbA1c as a biomarker for dyslipidaemia as well as a potential indirect predictor of cardiovascular disease (CVD) risk in T2DM patients.

Keyword: Diabetic dyslipidaemia; Glycated haemoglobin (HbA1c); Type 2 diabetes mellitus (T2DM); Lipid parameters; Fasting blood glucose (FBG)